

IN THE CLAIMS

Amend Claims 108, 114, 158, and 168 and add new Claims 217 - 233 so that the claims are as follows:

1 - 107. (Canceled)

108. (Currently amended) A method comprising:

providing a spacer comprising a spacer wall having a face that has roughness which, as approximated by identical parallel cylindrical pores of pore diameter d_p , corresponds to a wall porosity of at least 10% along the wall's face and a pore height h_p of at least 15% of pore height parameter h_{MD} that equals $\sqrt{2d_p \mathcal{E}_{2DMD} / eE_{AV}}$, where e is the electron charge, \mathcal{E}_{2DMD} is the median departure energy of secondary electrons emitted by the wall, and E_{AV} is electric field strength, the roughness in the wall's face comprising depressions or/and protuberances in the wall's face, each depression or protuberance extending only partway across the wall's face; and

positioning the spacer between first and second plate structures of a flat-panel display in which, during operation of the display, the second plate structure produces an image upon receiving electrons emitted by the first plate structure as an electric field of average strength E_{AV} is directed from the second plate structure to the first plate structure.

109. (Canceled)

110. (Previously amended) A method as in Claim 108 wherein the spacer providing act entails forming the wall to comprise:

a wall-shaped substrate having a face along which there is roughness; and

a coating overlying the substrate's face and having a face that largely forms the wall's face, the roughness in the wall's face generally conforming to the roughness in the substrate's face.

111. (Previously amended) A method as in Claim 108 wherein the spacer providing act entails forming the wall to comprise:

a wall-shaped substrate; and

a rough layer overlying the substrate and having a rough face that largely forms the wall's face.

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112. (Previously amended) A method as in Claim 108 wherein the spacer providing act entails forming the wall to comprise:

a wall-shaped substrate;

a rough layer overlying the substrate and having a face along which there is roughness; and

a coating overlying the rough layer's face and having a face that largely forms the wall's face, the roughness in the wall's face generally conforming to the roughness in the rough layer's face.

113. (Canceled)

114. (Currently amended) A method comprising:

providing a spacer comprising a main spacer body having a face along which multiple pores of average diameter of 1 - 1,000 nm extend into the main body at a porosity along the main body's face of at least 10%, the pores averagely extending deeper into the main body than their average diameter, each pore laterally surrounded by material of the main body where that pore reaches the main body's face; and

positioning the spacer between opposing first and second plate structures of a flat-panel display in which, during display operation, the second plate structure produces an image upon receiving electrons emitted by the first plate structure.

115. (Original) A method as in Claim 114 wherein the porosity of the pores along the main body's face is at least 40%.

116. (Previously amended) A method as in Claim 114 wherein the spacer providing act comprises:

furnishing a composite in which support and further material are interspersed with each other;

removing at least part of the further material from the composite to convert it into a porous body; and

utilizing at least a segment of the porous body as at least part of the main body.

117. (Previously amended) A method as in Claim 116 wherein:

the composite furnishing act entails providing the support and further materials over a substrate; and

the segment utilizing act also entails utilizing at least the segment of the substrate as at least part of the main body.

118. (Previously amended) A method as in Claim 116 wherein:
the support material comprises ceramic;
the further material comprises organic material consisting of carbon and non-carbon material; and
the further-material removing act entails removing at least part of the non-carbon material.
119. (Previously amended) A method as in Claim 118 wherein the further-material removing act comprises at least one of (a) etching the further material and (b) pyrolyzing the further material.
120. (Previously amended) A method as in Claim 116 wherein:
the composite comprises a gel or open network of solid material;
the further material comprises liquid; and
the further-material removing act entails removing at least part of the liquid without causing the support material to completely fill space previously occupied by the removed liquid.
121. (Original) A method as in Claim 120 wherein the support material comprises at least one of: (a) oxide of at least one non-carbon element in Groups 3b, 4b, 5b, 6b, 7b, 8, 1b, 2b, 3a, and 4a of Periods 2 - 6 of the Periodic Table including the lanthanides; and (b) hydroxide of at least one non-carbon element in Groups 3b, 4b, 5b, 6b, 7b, 8, 1b, 2b, 3a, and 4a of Periods 2 - 6 of the Periodic Table including the lanthanides.
- 122 - 142. (Canceled)
143. (Previously amended) A method comprising:
furnishing a solid composite of support material and further material interspersed with each other;
removing at least part of the further material from the composite along an exposed face of the composite to convert the composite into a porous body having a rough face in which there are depressions where the further material has been removed; and
positioning, between opposing first and second plate structures of a flat-panel display for which the second plate structure produces an image upon receiving electrons emitted by the first plate structure during operation of the display, a spacer comprising at least a segment of the porous body.
- 144 - 157. (Canceled)

158. (Currently amended) A method comprising:

providing a coating over a face of a primary body into which multiple pores extend along the primary body's face such that the primary body has a porosity of at least 10% along the primary body's face, each pore laterally surrounded by material of the primary body where that pore reaches the primary body's face; and

positioning, between opposing first and second plate structures of a flat-panel display for which the second plate structure produces an image upon receiving electrons emitted by the first plate structure during operation of the display, a spacer comprising at least a segment of the primary body and overlying coating.

159 - 167. (Canceled)

168. (Currently amended) A method comprising the steps of:

roughening an initial face of a primary body to form a rough face by a procedure in which the primary body comprises an electrically non-conductive substrate and a primary layer formed over the substrate, the primary layer has a face that largely forms the primary body's initial face, and material of the primary layer is removed without significantly attacking the substrate; and

subsequently positioning, between opposing first and second plate structures of a flat-panel display for which the second plate structure produces an image upon receiving electrons emitted by the first plate structure during operation of the display, a spacer comprising at least a segment of the primary body and its rough face.

169 - 184. (Canceled)

185. (Previously amended) A method comprising:

providing a porous layer over a substrate such that the porous layer has an average electrical resistivity of $10^8 - 10^{14}$ at 25°C, an average thickness of no more than 20 μm , and a porosity of at least 10% along a face thereof spaced part from the substrate; and

positioning, between opposing first and second plate structures of a flat-panel display for which the second plate structure produces an image upon receiving electrons emitted by the first plate structure during operation of the display, a spacer comprising at least a segment of the substrate and overlying porous layer.

186. (Canceled)

187. (Previously amended) A method comprising:
providing electrically non-conductive protuberances over a primary body to form a rough face from the protuberances and any adjoining exposed material of the primary body;
and

subsequently positioning, between first and second plate structures of a flat-panel display for which the second plate structure produces an image upon receiving electrons emitted by the first plate structure during operation of the display, a spacer comprising at least a segment of the primary body and overlying protuberances.

188 - 192. (Canceled)

193. (Previously amended) A method comprising:
etching a primary body with etchant that impinges on a microscopically rough face of the primary body substantially non-perpendicular to most of an imaginary smooth surface that macroscopically approximates the primary body's rough face; and

subsequently positioning, between opposing first and second plate structures of a flat-panel display, a spacer comprising at least a segment of the primary body.

194 - 204. (Canceled)

205. (Previously amended) A method comprising:
forming a precursor pedestal layer over a substrate;
providing particles over the precursor layer;
furnishing pillars over the substrate according to a procedure that comprises removing material of the precursor layer not covered by the particles such that remaining material of the precursor layer comprises pedestals respectively underlying the particles, each pillar comprising a different one of the pedestals; and

subsequently positioning, between first and second plate structures of a flat-panel display for which the second plate structure produces an image upon receiving electrons emitted by the first plate structure during operation of the display, a spacer comprising at least a segment of the substrate and overlying pillars.

206 - 210. (Canceled)

211. (Previously amended) A method comprising:
providing a layer of spires over a substrate; and
subsequently positioning, between first and second plate structures of a flat-panel display for which the second plate structure produces an image upon receiving electrons

emitted by the first plate structure during operation of the display, a spacer comprising at least a segment of the substrate and overlying spires.

212 - 216. (Canceled)

217. (New) A method as in Claim 108 wherein the wall comprises at least one of the following materials along the wall's face: (a) carbon; (b) a composition of carbon and silicon; (c) a composition of boron and nitrogen; (d) oxide of at least one of beryllium, carbon, magnesium, aluminum, silicon, titanium, vanadium, chromium, manganese, iron, yttrium, niobium, molybdenum, lanthanum, cerium, praseodymium, neodymium, europium, and tungsten; (e) hydroxide of at least one of beryllium, carbon, magnesium, aluminum, silicon, titanium, vanadium, chromium, manganese, iron, yttrium, niobium, molybdenum, lanthanum, cerium, praseodymium, neodymium, europium, and tungsten; (f) nitride of at least one of aluminum, silicon, and titanium; and (g) boron carbide.

218. (New) A method as in Claim 110 wherein the coating comprises at least one of: (a) carbon; (b) a composition of carbon and at least one of silicon, nitrogen, and hydrogen; (c) a composition of boron and at least one of carbon, silicon, and nitrogen; (d) oxide of at least one of titanium, chromium, manganese, iron, yttrium, niobium, molybdenum, cerium, praseodymium, neodymium, europium, and tungsten; (e) hydroxide of at least one of titanium, chromium, manganese, iron, yttrium, niobium, molybdenum, cerium, praseodymium, neodymium, europium, and tungsten; and (f) nitride of at least one of aluminum and titanium.

219. (New) A method as in Claim 111 wherein the rough layer comprises at least one of: (a) carbon; (b) a composition of carbon and silicon; (c) a composition of boron and nitrogen; (d) oxide of at least one of carbon, aluminum, silicon, titanium, vanadium, chromium, manganese, iron, yttrium, niobium, molybdenum, lanthanum, cerium, praseodymium, neodymium, europium, and tungsten; (e) hydroxide of at least one of carbon, aluminum, silicon, titanium, vanadium, chromium, manganese, iron, yttrium, niobium, molybdenum, lanthanum, cerium, praseodymium, neodymium, europium, and tungsten; (f) nitride of at least one of aluminum and silicon; and (g) boron carbide.

220. (New) A method as in Claim 112 wherein the coating comprises at least one of: (a) carbon; (b) a composition of carbon and at least one of silicon, nitrogen, and hydrogen; (c) a composition of boron and at least one of carbon, silicon, and nitrogen; (d) oxide of at least one of titanium, chromium, manganese, iron, yttrium, niobium, molybdenum, cerium, praseodymium, neodymium, europium, and tungsten; (e) hydroxide of at least one of

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titanium, chromium, manganese, iron, yttrium, niobium, molybdenum, cerium, praseodymium, neodymium, europium, and tungsten; and (f) nitride of at least one of aluminum and titanium.

221. (New) A method as in Claim 114 wherein the coating comprises at least one of: (a) carbon; (b) a composition of carbon and at least one of silicon, nitrogen, and hydrogen; (c) a composition of boron and at least one of carbon, silicon, and nitrogen; (d) oxide of at least one of titanium, chromium, manganese, iron, yttrium, niobium, molybdenum, cerium, praseodymium, neodymium, europium, and tungsten; (e) hydroxide of at least one of titanium, chromium, manganese, iron, yttrium, niobium, molybdenum, cerium, praseodymium, neodymium, europium, and tungsten; and (f) nitride of at least one of aluminum and titanium.

222. (New) A method as in Claim 114 wherein the spacer providing act entails forming the main body to comprise:

a substrate;

a porous layer overlying the substrate; and

a coating overlying the rough layer's face and having a face that largely forms the main body's face.

223. (New) A method as in Claim 222 wherein:

the coating comprises carbon; and

the porous layer comprises oxide of at least one of aluminum, silicon, titanium, chromium, iron, and neodymium.

224. (New) A method as in Claim 114 wherein the spacer providing act comprises: anodically oxidizing at least part of a body of metal to form a porous body; and utilizing at least part of the porous body as at least part of the main body.

225. (New) A method as in Claim 224 wherein the metal comprises aluminum.

226. (New) A method as in Claim 225 further including the step of forming a coating over the porous body, the coating comprising carbon or/and chromium oxide.

227. (New) A method as in Claim 143 wherein the further material is present in the composite as particles of the further material.

228. (New) A method as in Claim 227 wherein the particles are roughly spherical.

229 (New) A method as in Claim 158 wherein the coating comprises at least one of: (a) carbon; (b) a composition of carbon and at least one of silicon, nitrogen, and hydrogen; (c) a composition of boron and at least one of carbon, silicon, and nitrogen; (d) oxide of at least one of titanium, chromium, manganese, iron, yttrium, niobium, molybdenum, cerium, praseodymium, neodymium, europium, and tungsten; (e) hydroxide of at least one of titanium, chromium, manganese, iron, yttrium, niobium, molybdenum, cerium, praseodymium, neodymium, europium, and tungsten; and (f) nitride of at least one of aluminum and titanium.

230. (New) A method as in Claim 158 wherein:
the primary body comprises oxide of at least one of aluminum, silicon, titanium, chromium, iron, and neodymium; and
the coating comprises carbon.

231. (New) A method as in Claim 185 wherein the porous layer comprises at least one of: (a) carbon; (b) a composition of carbon and silicon; (c) a composition of boron and nitrogen; (d) oxide of at least one of carbon, aluminum, silicon, titanium, vanadium, chromium, manganese, iron, yttrium, niobium, molybdenum, lanthanum, cerium, praseodymium, neodymium, europium, and tungsten; (e) hydroxide of at least one of carbon, aluminum, silicon, titanium, vanadium, chromium, manganese, iron, yttrium, niobium, molybdenum, lanthanum, cerium, praseodymium, neodymium, europium, and tungsten; (f) nitride of at least one of aluminum and silicon; and (g) boron carbide.

232. (New) A method as in Claim 193 wherein:
the second plate structure is operable to produce an image upon receiving electrons emitted by the first plate structure during operation of the display, the display being characterized by a forward electron-travel direction from the first plate structure to the second plate structure generally along the spacer; and,
relative to the spacer as positioned between the plate structures, the etchant has a substantial etch component in the forward electron-travel direction.

233. (New) A method as in Claim 194 wherein the body etching act causes a directional roughness characteristic indicative of the forward electron-travel direction to be imparted to the primary body's rough face.

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